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CLAIMS

[The scope of a claim for utility model registration]

[Claim 1]A smoking pipe which it has the following, and an inside of said pipe part is filled up with porous glass textiles, and is characterized by said cigarette stowage being the barrel created with porous glass with which many vents were established.

A pipe part by which a mouthpiece was provided in an end.

A cigarette stowage held so that desorption to the other end of this pipe part was possible.

[Translation done.]

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DETAILED DESCRIPTION

[Detailed explanation of the device]

[0001]

[Industrial Application]

This design is related with the pipe used as nicotine and an object for detarrings on the occasion of smoking of a cigarette.

[0002]

[Description of the Prior Art]

Since nicotine and tar which are contained in the smoke of a cigarette are healthily harmful, the pipe which removes this and to which it sticks is used.

What the attaching part which a mouthpiece is provided in one end and holds a cigarette to the other end as a conventional smoking pipe is provided, and filled up the inside with the filter for nicotine removal is common.

[0003]

[Problem(s) to be Solved by the Device]

However, although the filter with which the conventional smoking pipe was filled up can carry out adsorption treatment of the nicotine in which a smoker is contained in suck smoke, it cannot remove the nicotine contained in the sidestream smoke produced while the smoker is not smoking the cigarette. for this reason, the conventional smoking pipe -- a smoker -- although it is effective for the person himself/herself, in spite of not smoking like the case where there is no filter, for people around a smoker, it will **** harmful nicotine.

[0004]

This design is made in view of such a situation, and there is a place made into the purpose in a smoker providing the smoking pipe which can carry out adsorption treatment not only of suck smoke but the nicotine contained in a sidestream smoke.

[0005]

[Means for Solving the Problem]

A smoking pipe of this design is provided with a pipe part by which a mouthpiece was provided in one end, and a cigarette stowage held so that desorption to the other end of this pipe part was possible. An inside of said pipe part is filled up with porous glass textiles, and it is characterized by said cigarette stowage being the barrel created with porous glass with which many vents were established.

[0006]

[Function]

Where a cigarette is stored, fire lights a stowage and he smokes to it. During smoking, a smoker smokes the smoke which passed along the porous glass textiles with which the inside of a pipe part was filled up, and while he is not smoking, the sidestream smoke which passed along the vent of the stowage is emitted to the circumference.

Since the fine-pores characteristic, therefore adsorption effect are large, porous glass adsorbs nicotine and tar here, and this nicotine and tar are suitably caught by combining with the moisture adhering to a

glass surface. It functions as what is called a nicotine removal filter.

[0007]

Therefore, the nicotine in which a smoker is contained in suck smoke, and tar are removed by the porous glass textiles with which the inside of a pipe part was filled up. On the other hand, nicotine and tar which are contained in a sidestream smoke are removed when emitted from a stowage.

[0008]

[Example]

The example of the cigarette pipe of this design is described based on a drawing below.

The smoking pipe 10 concerning drawing 1 this design 1 example is shown, and drawing 2 shows the state where the cigarette 9 was inserted in this smoking pipe 10. In the smoking pipe 10, the attaching part 5 of the other end of the pipe part 1 by which the mouthpiece 3 was formed in one end is equipped with the cigarette stowage 2 by fitting so that desorption is possible.

[0009]

It fills up with the filter 4 which the pipe part 1 comprises heat-resistant plastics, such as ABS and polycarbonate, and becomes an inside for porous glass textiles. Although the porous glass textiles used for this design carry out phase splitting of the alkali boro-silicated glass to a silica phase and a boric acid alkali phase by heat treatment as known from the former, they make a boric acid alkali phase eluted by acid treatment and are created. It is preferably used from especially the thing of the following characteristic being excellent in heat resistance and adsorption performance.

[0010]

pole diameter; -- 50A or less BET surface area; -- more than 400-m²/g pore volume; -- 0.4-0.6cm³/g basic component; -- 96 % of the weight or more of SiO₂ The cigarette stowage 2 is the barrel in which the both ends created with porous glass carried out the opening. The attaching part 5 of the pipe part 1 is equipped with the fitting part 6 by the side of one of the stowage 2, and the cigarette 9 can be inserted now from the loading slot 7 by the side of other. The fine pores of the porous glass which exists over the whole cigarette stowage 2 surface act as the vent 8. As porous glass which constitutes the cigarette stowage 2, what has the following characteristic from a viewpoint of breathability is used preferably.

[0011]

pole diameter; -- 0.05-15.0 micrometers BET surface area; -- 0.1-4.0m²/g pore volume; -- 0.4-0.6cm³/g basic component; -- about 70 % of the weight of SiO₂ 15 % of the weight of aluminum₂O₃ 7 % of the weight of B₂O₃ . If the cigarette 9 is stored to the stowage 2 and you smoke to it, the moisture in smoke and nicotine, and tar will adhere to the porous glass fiber surface of the filter 4 according to the dehumidification effect and adsorption effect of porous glass, and when both join together, nicotine and tar will be caught suitably.

Therefore, the smoker can smoke the smoke in which harmful nicotine etc. are not contained. Since the sidestream smoke produced on the other hand when a smoker does not smoke is emitted into the air through the cigarette stowage 2, prehension removal of the nicotine contained in a sidestream smoke, the tar, etc. is carried out with the porous glass which constitutes the stowage 2. Therefore, the person around a smoker does not need to inhale the harmful nicotine contained in a sidestream smoke, and tar.

[0012]

Since oxygen is supplied from the vent established over the whole stowage 2 surface, it can continue burning, without the fire of a cigarette going out, even if it is in the state stored by the stowage 2. Although stowage 2 wall surface touches the cigarette under combustion, For example, in the porous glass with which about 70% of the weight or more of a porous glass presentation comprises SiO₂, it is checked from the reasons that heat-resistant temperature is as high as about 1000 **, contact time is not so long as **, etc. that the stowage 2 does not change.

[0013]

The cigarette stowage 2 of this design may be the barrel that a gap is provided between the cigarette 9 and stowage 2 wall surface, as long as the inside diameter is the composition that not only a barrel equal

to the outer diameter of the cigarette 9 but a cigarette can be held. Since the cigarette 9 and the stowage 2 under combustion will not carry out direct contact by providing a gap, the range of the porous glass presentation which can be used from a heat-resistant viewpoint spreads, and it is desirable.

[0014]

It may be the stowage 22 which one end blockades and covers the cigarette 9 whole like the smoking pipe 20 shown in drawing 3. In this case, the cigarette 9 is held at the attaching part 23 of the pipe part 21, and it is equipped with the stowage 22 by screwing with the attaching part 23 and the fitting part 24 which is the open ends of the stowage 22. In the case of the smoking pipe 20, after holding the cigarette 9 fire lit beforehand to the attaching part 23, it equips with the stowage 22 so that the mantle of the cigarette 9 may be carried out. When a sidestream smoke goes away through the porous glass wall surface of the stowage 22, prehension removal of nicotine and tar which are contained in a sidestream smoke is carried out. The fine-pores slack vent of the porous glass which constitutes the stowage 22 is shown by 25 among drawing 3.

[0015]

[Effect of the Device]

The smoking pipe of this design is removed when the nicotine in which a smoker is contained in suck smoke, the nicotine which tar is removed by the porosity glass filter and contained in a sidestream smoke, and tar pass a stowage wall surface. Therefore, if the smoking pipe of this design is used, it is effective in that not only a smoker but the person of the circumference of a smoker does not need to inhale a harmful nicotine substance.

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TECHNICAL FIELD

[Industrial Application]

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PRIOR ART**[Description of the Prior Art]**

Since nicotine and tar which are contained in the smoke of a cigarette are healthily harmful, the pipe which removes this and to which it sticks is used.

What the attaching part which a mouthpiece is provided in one end and holds a cigarette to the other end as a conventional smoking pipe is provided, and filled up the inside with the filter for nicotine removal is common.

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EFFECT OF THE INVENTION

[Effect of the Device]

The smoking pipe of this design is removed when the nicotine in which a smoker is contained in suck smoke, the nicotine which tar is removed by the porosity glass filter and contained in a sidestream smoke, and tar pass a stowage wall surface. Therefore, if the smoking pipe of this design is used, it is effective in that not only a smoker but the person of the circumference of a smoker does not need to inhale a harmful nicotine substance.

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TECHNICAL PROBLEM

[Problem(s) to be Solved by the Device]

However, although the filter with which the conventional smoking pipe was filled up can carry out adsorption treatment of the nicotine in which a smoker is contained in suck smoke, it cannot remove the nicotine contained in the sidestream smoke produced while the smoker is not smoking the cigarette. for this reason, the conventional smoking pipe -- a smoker -- although it is effective for the person himself/herself, in spite of not smoking like the case where there is no filter, for people around a smoker, it will **** harmful nicotine.

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MEANS

[Means for Solving the Problem]

A smoking pipe of this design is provided with a pipe part by which a mouthpiece was provided in one end, and a cigarette stowage held so that desorption to the other end of this pipe part was possible. An inside of said pipe part is filled up with porous glass textiles, and it is characterized by said cigarette stowage being the barrel created with porous glass with which many vents were established.

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OPERATION**[Function]**

Where a cigarette is stored, fire lights a stowage and he smokes to it. During smoking, a smoker smokes the smoke which passed along the porous glass textiles with which the inside of a pipe part was filled up, and while he is not smoking, the sidestream smoke which passed along the vent of the stowage is emitted to the circumference.

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EXAMPLE**[Example]**

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DESCRIPTION OF DRAWINGS**[Brief Description of the Drawings]**

[Drawing 1]It is a perspective view showing the smoking pipe concerning this 1 example.

[Drawing 2]It is a sectional view showing the smoking pipe concerning this 1 example.

[Drawing 3]It is a sectional view showing the smoking pipe concerning other examples of this design.

[Description of Notations]

- 1 Pipe part
- 2 Stowage
- 3 Mouthpiece
- 4 Porous glass textiles filter
- 8 Vent
- 10 Smoking pipe
- 20 Smoking pipe
- 21 Pipe part
- 22 Stowage
- 25 Vent

[Translation done.]

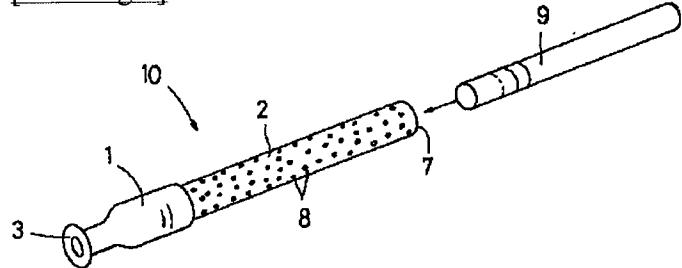
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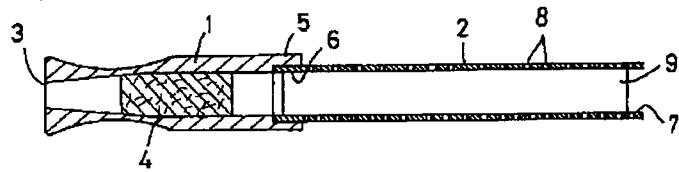
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DRAWINGS

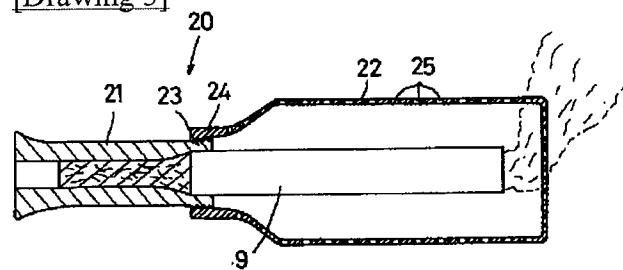
[Drawing 1]



[Drawing 2]



[Drawing 3]



[Translation done.]

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	B	7229-4B		
13/16		7229-4B		

審査請求 未請求 請求項の数1(全2頁)

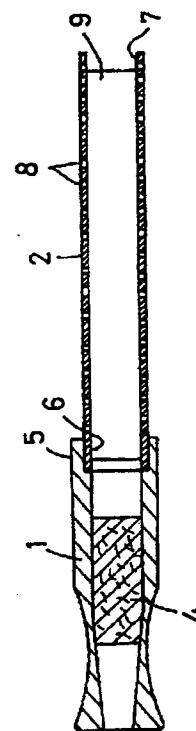
(21)出願番号	実願平4-89020	(71)出願人 000103518 オーツタイヤ株式会社 大阪府泉大津市河原町9番1号
(22)出願日	平成4年(1992)12月25日	(72)考案者 金岡 和馬 和歌山県那賀郡打田町重行362番地 (74)代理人 弁理士 安田 敏雄

(54)【考案の名称】 喫煙用パイプ

(57)【要約】

【構成】 一端に吸い口が設けられたパイプ部と、該パイプ部の他端に脱着可能に保持された煙草収納部とを備え、前記パイプ部内部には多孔質ガラス纖維が充填され、前記煙草収納部は多数の通気孔が開設された多孔質ガラスで作成された筒体であることを特徴とする。

【効果】 喫煙者が吸う煙中に含まれるニコチン、タールが多孔質ガラスフィルターにより除去され、副流煙中に含まれるニコチン、タールが収納部壁面を通過する際に除去される。よって、本考案の喫煙用パイプを使用すれば、喫煙者のみならず喫煙者周囲の者も有害なニコチン物質を吸わずに済むという効果がある。



【実用新案登録請求の範囲】

【請求項 1】 一端に吸い口が設けられたパイプ部と、該パイプ部の他端に脱着可能に保持された煙草収納部とを備え、前記パイプ部内部には多孔質ガラス纖維が充填され、前記煙草収納部は多数の通気孔が開設された多孔質ガラスで作成された筒体であることを特徴とする喫煙用パイプ。

【図面の簡単な説明】

【図 1】 本考案一実施例に係る喫煙用パイプを示す斜視図である。

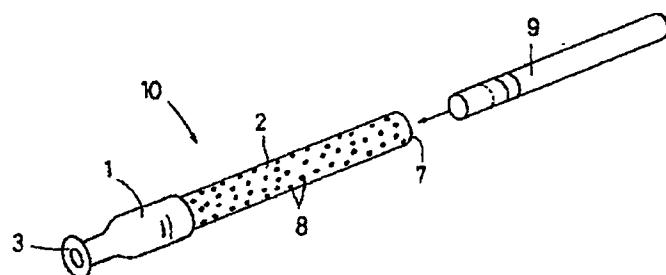
【図 2】 本考案一実施例に係る喫煙用パイプを示す断面図である。

【図 3】 本考案の他の実施例に係る喫煙用パイプを示す断面図である。

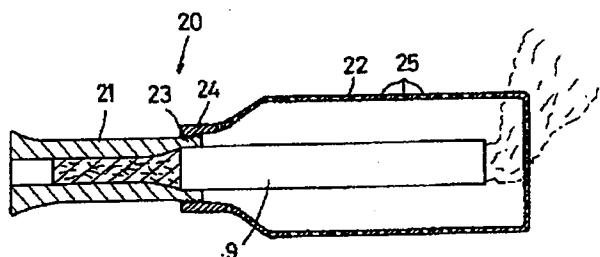
【符号の説明】

1	パイプ部
2	収納部
3	吸い口
4	多孔質ガラス纖維フィルター
8	通気孔
10	喫煙用パイプ
20	喫煙用パイプ
21	パイプ部
22	収納部
25	通気孔

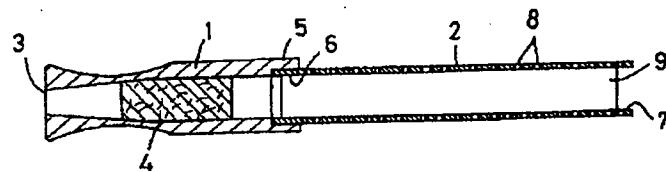
【図 1】



【図 3】



【図 2】



【考案の詳細な説明】

【0001】

【産業上の利用分野】

本考案は、紙巻煙草の喫煙に際してニコチン、タール除去用として使用されるパイプに関する。

【0002】

【従来の技術】

煙草の煙に含まれるニコチン、タールは健康に有害であることから、これを除去、吸着するパイプが利用されている。

従来の喫煙用パイプとしては、一端に吸い口が設けられ他端に煙草を保持する保持部が設けられていて、内部にニコチン除去用フィルターを充填したものが一般的である。

【0003】

【考案が解決しようとする課題】

しかし、従来の喫煙用パイプに充填されたフィルターは、喫煙者が吸う煙中に含まれるニコチンを吸着除去できるが、喫煙者が煙草を吸っていないときに生じる副流煙中に含まれるニコチンを除去できない。このため、従来の喫煙用パイプは喫煙者本人にとっては有効であるが、喫煙者の周囲の人々にとってはフィルターがない場合と同様に喫煙していないにも拘らず有害なニコチンを吸わされることになる。

【0004】

本考案はこのような事情に鑑みてなされたものであり、その目的とするところは、喫煙者が吸う煙のみならず、副流煙中に含まれるニコチンも吸着除去できる喫煙用パイプを提供することにある。

【0005】

【課題を解決するための手段】

本考案の喫煙用パイプは、一端に吸い口が設けられたパイプ部と、該パイプ部の他端に脱着可能に保持された煙草収納部とを備え、前記パイプ部内部には多孔質ガラス繊維が充填され、前記煙草収納部は多数の通気孔が開設された多孔質ガ

ラスで作成された筒体であることを特徴とする。

【0006】

【作用】

収納部に煙草を収納した状態で火をつけて喫煙する。喫煙中は喫煙者がパイプ部内部に充填された多孔質ガラス纖維を通った煙を吸い、喫煙していないときは収納部の通気孔を通った副流煙が周囲に放出される。

ここで多孔質ガラスは、その細孔特性故に吸着効果が大きいことからニコチン、タールを吸着し、該ニコチン、タールはガラス表面に付着した水分と結合することにより好適に捕捉される。いわゆるニコチン除去フィルターとして機能する。

【0007】

従って、喫煙者が吸う煙中に含まれるニコチン、タールはパイプ部内部に充填された多孔質ガラス纖維により除去される。一方、副流煙中に含まれるニコチン、タールは収納部から放出される際に除去される。

【0008】

【実施例】

以下に本考案の煙草パイプの実施例を図面に基づいて説明する。

図1本考案一実施例に係る喫煙用パイプ10を示しており、図2はこの喫煙用パイプ10に煙草9を挿入した状態を示している。喫煙用パイプ10において、一端に吸い口3が設けられたパイプ部1の他端の保持部5に、煙草収納部2が嵌合により脱着可能に装着されている。

【0009】

パイプ部1はABS、ポリカーボネート等の耐熱性プラスチックで構成され、内部に多孔質ガラス纖維でなるフィルター4が充填されている。本考案に使用される多孔質ガラス纖維は、従来から知られているようにアルカリホウ珪酸ガラスを熱処理によりシリカ相とホウ酸アルカリ相に分相させ、酸処理によりホウ酸アルカリ相を溶出させて作成されたものであるが、特に下記特性のものが耐熱性及び吸着性能が優れていることから好ましく用いられる。

【0010】

細孔径；50Å以下

BET表面積；400m²/g以上

細孔容積；0.4~0.6cm³/g

主要成分；SiO₂ 96重量%以上

煙草収納部2は多孔質ガラスで作成された両端が開口した筒体である。収納部2の一側の嵌合部6をパイプ部1の保持部5に装着し、他側の挿入口7から煙草9を挿入できるようになっている。煙草収納部2表面全体にわたって存在する多孔質ガラスの細孔が通気孔8として作用する。なお、煙草収納部2を構成する多孔質ガラスとしては、通気性の観点から下記特性を有するものが好ましく用いられる。

【0011】

細孔径；0.05~15.0μm

BET表面積；0.1~4.0m²/g

細孔容積；0.4~0.6cm³/g

主要成分；SiO₂ 約70重量%

Al₂O₃ 15重量%

B₂O₃ 7重量%

収納部2に煙草9を収納して喫煙すると、多孔質ガラスの脱湿効果及び吸着効果により煙中の水分及びニコチン、タールがフィルター4の多孔質ガラス纖維表面に付着し、両者が結合することによりニコチン、タールが好適に捕捉される。従って、喫煙者は有害なニコチン等が含まれない煙を喫煙することができる。一方、喫煙者が喫煙しない場合に生じる副流煙は煙草収納部2を通って空気中に放出されるため、副流煙中に含まれるニコチン、タール等は収納部2を構成する多孔質ガラスにて捕捉除去される。従って、喫煙者の周囲の者は副流煙中に含まれる有害なニコチン、タールを吸わずに済む。

【0012】

また、収納部2表面全体にわたって開設された通気孔から酸素が供給されるので、収納部2に収納された状態であっても煙草の火が消えたりすることなく燃え続けることができる。収納部2壁面は燃焼中の煙草と接触しているが、例えば、

多孔質ガラス組成の約70重量%以上がSiO₂で構成される多孔質ガラスでは耐熱温度が約1000°C程度と高いこと、接触時間が其ほど長くないこと等の理由から収納部2は変形等しないことが確認されている。

【0013】

なお、本考案の煙草収納部2はその内径が煙草9の外径と等しい筒体に限らず、煙草を保持できる構成であれば煙草9と収納部2壁面との間に間隙が設けられるような筒体であってもよい。間隙を設けることにより燃焼中の煙草9と収納部2とが直接接触しなくなるので、耐熱性の観点から使用できる多孔質ガラス組成の範囲が広がり好ましい。

【0014】

また、図3に示す喫煙用パイプ20のように、一方の端部が閉塞していて煙草9全体を覆うような収納部22であってもよい。この場合、煙草9はパイプ部21の保持部23に保持され、収納部22は保持部23と収納部22の開口端である嵌合部24との螺合により装着されている。喫煙用パイプ20の場合には、予め火をつけた煙草9を保持部23に保持した後、煙草9を外套するように収納部22を装着する。副流煙が収納部22の多孔質ガラス壁面を通って出ていく際に、副流煙中に含まれるニコチン、タールが捕捉除去される。図3中、収納部22を構成する多孔質ガラスの細孔たる通気孔は25で示されている。

【0015】

【考案の効果】

本考案の喫煙用パイプは、喫煙者が吸う煙中に含まれるニコチン、タールが多孔質ガラスフィルターにより除去され、副流煙中に含まれるニコチン、タールが収納部壁面を通過する際に除去される。よって、本考案の喫煙用パイプを使用すれば、喫煙者のみならず喫煙者周囲の者も有害なニコチン物質を吸わずに済むという効果がある。